

State of California—Health and Human Services Agency California Department of Public Health



February 20, 2019

TO: PARTICIPATING AGENCIES IN THE 2019 CALIFORNIA

ARBOVIRUS SURVEILLANCE PROGRAM

SUBJECT: 2019 MOSQUITO POOL AND SENTINEL CHICKEN TESTING

Enclosed are instructions for the 2019 arbovirus surveillance season. If you have questions about results or submission issues concerning chicken samples or mosquito pools, please contact Tina Feiszli at (510) 412-6253 or tina.feiszli@cdph.ca.gov

IMPORTANT ANNOUNCEMENTS FOR 2019

Mosquito Pool Supplies

Vials can be purchased through SPEX SamplePrep: www.spexsampleprep.com

or 800-522-7739.

Catalogue Item #: 3116

Description: Polystyrene grinding vial with slip on cap; 12.7 x 51mm

Grinding beads can be purchased through Fisher Scientific: www.fishersci.com or

800-766-7000.

Catalogue Item #: 11-312C

Description: 5mm solid glass beads

Please contact Tina Feiszli if you have any questions about ordering these supplies. They may be available through other vendors, but please be sure to order the correct vials.

Sentinel chickens

Pick up date: April 4, 2019 at Haley Farms in Modesto

Due to the Newcastle Disease outbreak in southern California, all orders this year will be processed through Haley's Egg Farm in Modesto.

Chickens should be ordered through MVCAC by March 22. Order forms can be found at: http://www.mvcac.org/amg/wp-content/uploads/2019-Chicken-Order-Form.pdf



Table of Contents

Registration of Agencies and Sites	page 3
Procedures for Processing Mosquitoes	page 4 – 5
Mosquito Pools Submitted to DART – 2019 Form	page 6
Instructions for Sentinel Blood Samples	page 7– 9
Sentinel Chicken Blood – 2019 Form	page 10
Southern Schedule Districts	page 11
Northern Schedule Districts	page 12
Southern California Schedule for Chicken Sera	page 13
Northern California Schedule for Chicken Sera	page 14

Registration of Agencies and Sites

1. Participation of agencies

Agencies interested in participating in the statewide surveillance program for mosquitoborne viruses should place orders for sentinel chicken testing through the California Department of Public Health (CDPH). Agencies will be billed in advance for the number of samples to be tested. Mosquito pool testing by the Davis Arbovirus Research and Training laboratory (DART) will be billed through the Mosquito and Vector Control Association (MVCAC).

Agencies are responsible for registering and maintaining updated information for their surveillance sites online at: http://gateway.calsurv.org/. Accurate geographic coordinates are especially important for registered sites, because they will be used to generate computer maps that will post test results in real-time. DART will host real-time maps at http://maps.calsurv.org/. In addition to the public view of the maps, local agencies can use their Calsurv username and password to log in to the same website to access additional details that are available only to CalSurv users.

2. Registration of surveillance sites

Registration of new sites used for sentinel chickens or the collection of mosquitoes for abundance monitoring or virus testing should be done online at: http://gateway.calsurv.org. CDPH and DART will only test samples from registered surveillance sites.

3. Registration of sentinel chicken flocks and wing band numbers

Prior to submitting any sentinel chicken blood samples to CDPH, agencies must annually register each flock and accompanying wing band numbers at http://gateway.calsurv.org. Agencies must use the unique band numbers assigned to their district by CDPH each year. Do not use leftover bands from a previous season. Please contact Tina Feiszli if additional bands are needed at any time throughout the year.

Procedures for Processing Mosquitoes for Arbovirus Detection

- Collect mosquitoes alive and return them immediately to the laboratory. Collections should be kept humid during transport with moist toweling to prevent desiccation. Females should be offered 5-10% sucrose if held overnight or longer before processing.
- 2. Anesthetize mosquitoes by cold, carbon dioxide, or triethylamine (TEA). TEA is recommended because specimens are permanently immobilized with minimal mortality and with no loss of virus titer (Kramer et al. 1990). TEA should be used either outdoors or under a chemical hood. Collections can be knocked down outdoors using a few drops of TEA, the specimens transferred to Petri dishes, and then taken into the laboratory for processing. If refrigerated, mosquitoes will remain alive in covered Petri dishes for 1 or 2 days without additional anesthesia. If mosquitoes are frozen before processing, sorting to species and enumeration must be done on a chill table to prevent virus loss.
- 3. Sort mosquito collections to species under a dissecting microscope at 10X to ensure correct identification and to make sure that extraneous mosquito parts (i.e., legs, wings) or other small insects such as chironomids or *Culicoides* are not inadvertently included in the pools. This is extremely important because diagnostics have transitioned from virus isolation to sensitive RNA methods of viral detection. Count and discard dead and dried mosquitoes. Pools are comprised of ≤ 50 females of each vector species from each collection site counted into individual polystyrene vials with snap caps containing two 5mm glass beads. Recommended sampling effort is ten pools of 50 females of each species from each site per week to detect minimum infection rates (MIRs) ranging from 0 to 20 per 1,000 females tested. Vials with pools should be labeled sequentially starting with #1 each year after the site code: e.g., KERN-1-19, where 19 refers to year 2019. Pools must be accompanied by a "MOSQUITO POOL SUBMISSION FORM" that should be printed after entering the records for pools to be submitted at http://gateway.calsurv.org. Pools can only be tested from sites with registered geographic locations.

Surveillance sites should be registered online at: http://gateway.calsurv.org. List the site code for each pool which consists of a designated four-letter agency code followed by 6 digits identifying the site (e.g., KERN000001). In the rare event that mosquitoes are collected from sites that are not already registered and are used only once (e.g., in response to a disease case notification or for a spot check on abundance in a particular area), pools may be recorded without assigning a unique site code by using your agency's generic "000000" site code, but it is critical that you also record the particular collection site on the Gateway's map for every mosquito collection that uses the generic code. Failure to do so will result in inaccurate records for your agency.

- 4. Number pools consecutively starting with 1 for each calendar year. Pool numbers do not need to follow the ordering of site codes: e.g., pool #1 may be from KERN000001, pool #2 may be from KERN000004, pool #3 may be from KERN000058, etc.
- 5. Freeze pools immediately at -80°C with either dry ice in an insulated container or in an ultra-low temperature freezer. Pools are shipped frozen on dry ice to UC Davis for testing by a real-time multiplex RT-PCR. Care must be taken not to allow pools to defrost during storage or shipment, because each freeze-thaw cycle may result in a decrease in viral titer; all virus will be lost if the specimens sit at room temperature for extended periods.

All pools are tested for WNV, SLEV, and WEEV. Mosquito pools can also be tested for chikungunya, dengue, and Zika viruses (CDZ) upon request. Agencies will receive an email notification that results have been entered into the CalSurv Gateway. Positive pools will also be reported in the weekly California Arbovirus Surveillance Bulletin.

Address mosquito pool shipments to the following address:

ATTN: Ying Fang

University of California

One Shields Avenue

Vet Med: PMI

Room 3336 Vet Med 3A

Davis, CA 95616

For UPS shipments only:

Ying Fang VM://PMI 3336 Vet Med 3A 1285 Veterinary Medicine Mall University of California, Davis Davis, CA 95616

Received:	
Tested:	
Bulletin No:	

MOSQUITO POOL SUBMISSION FORM-2019

Agency Code		
Agency		
Contact Name:	Phone:	

Site Code	Pool #	Date	Species	Sex	# in Pool	CDZ Testing?

INSTRUCTIONS FOR SENTINEL CHICKEN BLOOD SAMPLES

Take a reference blood sample from each chicken on the day you pick them up.

Store the reference bleed samples in the refrigerator. If a chicken tests positive on the first biweekly bleed, the reference bleed should be tested to determine if the seroconversion occurred prior to initial deployment.

INSTRUCTIONS:

Bi-weekly dry blood sample submissions:

- 1. Ensure all staff involved follow these instructions exactly
- 2. Collect blood samples onto half-inch wide filter paper strips. The blood must completely soak through a ¾ inch length portion of the strip. Use alcohol swabs on comb before bleeding and ensure strips are dried in a dust free environment.
- 3. Each strip must include the date bled and the wing band number.
- 4. Attach strips to a 5" X 7" index card in sequential order, from left to right (example on page 9).
- 5. Place the soaked-end down. Attach samples firmly to card in the same band number sequence that is listed on the form. Samples should not move.
- 6. Do not cover the date and band information on the strips.
- 7. Include the following information on the index card:

County, Agency code, Site, and Date Bled.

Place each individual index card with attached samples into a separate ziplock bag (only one card per bag).

8. Include a submission form for each flock. Do not put the form inside the ziplock bag.

Ship to:

California Department of Public Health
Vector Borne Disease Section, G164 (ATTN: Mary Joyce Pakingan)
850 Marina Bay Parkway
Richmond, CA 94804

In the laboratory specimens will be tested for WNV, SLEV, and WEEV IgG antibodies using an enzyme immunoassay. Positive specimens will be confirmed with an indirect fluorescent antibody or western blot test. Whole blood/serum may be requested to clarify inconclusive results.

Whole blood or sera sample submissions:

- 1. Bleed the chicken(s) requested "for confirmation" into a vacutainer tube.
- 2. If possible, centrifuge whole blood and aliquot <u>serum</u> into micro-centrifuge tube. <u>Do not</u> put whole blood into micro-centrifuge tube.
- 3. Clearly label the site code, band number, and date bled on tube. Whole blood samples must be shipped on blue ice (ice packs). Serum aliquots should be shipped on dry ice. Whole blood is not serum. Do not send frozen whole blood.
- 4. A Sentinel Blood Submission form must accompany each separate confirmation sample submitted. Indicate on the form that the sample is for "confirmation."
- 5. Ship sample(s) in an adequate shipping container with appropriate shipment precautions taken. Containers must be shipped with a label stating: "Biological Substances, Category B, UN3373".

Contact Tina Feiszli, VBDS in Richmond (510) 412-6253 concerning any questions about sample submissions or test results.

INTRUCTIONS FOR SENTINEL BLOOD

Attach filter paper strips to a 5" X 7" card as shown below. Write the date number on the blank end of each strip and write the identifying information shown

COUNTY

THESE ARE CHICKEN BLOOD SAMPLES

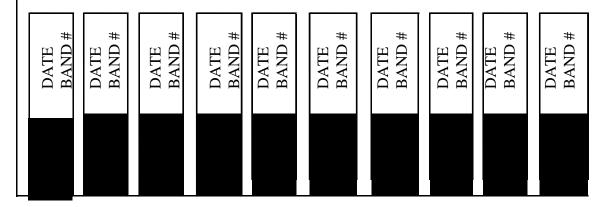
AGENCY

SITE

DATE

PLACE STRIPS IN SEQUENTIAL ORDER AS LISTED ON THE FORM FROM LEFT TO RIGHT

STAPLE THIS END



Note:

To maximum the turn-around-time for results, expedited shipping is recommended, as samples will be tested upon receipt at the laboratory. Agencies will receive an automated notification that results have been entered into the CalSurv Gateway, as well as a summary of positive bands. Additionally, seroconversions will be reported weekly in the California Arbovirus Surveillance Bulletin.

	VBDS PAGE NUMBER			
REGISTERED AGENC	Y CODE: *SITE CODE	<u> </u>		
Name of Agency:				
Name of Site:	Nearest City or Place:			
County:				
DATE BLED ://	BLED BY:			
CONTACT NAME:	Telephone ()			
NAME OF ALTERNATI	E: Telephone ()			
WING BAND NUMBER IN	REMARKS OR STATUS ("New" dead, missing, etc.) For new	VA/EE	CL E	w
SEQUENCE	birds added to flock, list the number and state "new	WEE	SLE	VV

A COPY OF THIS FORM MUST ACCOMPANY ALL SHIPMENTS OF CHICKEN BLOOD TO VBDS.

Southern Districts

Start Week: April 15, 2019

		, ====
AGENCY NAME	CODE	COUNTY
Antelope Valley MVCD	ANTV	LOS ANGELES
City of Long Beach	LONG	LOS ANGELES
City of Moorpark VC	MOOR	VENTURA
Coachella Valley MVCD	COAV	RIVERSIDE
Greater LA Co. VCD	GRLA	LOS ANGELES
L.A. County West VCD	LACW	LOS ANGELES
Northwest MVCD	NWST	RIVERSIDE
Riverside Co. Env. Health	RIVR	RIVERSIDE
San Bernardino Co. VCP	SANB	SAN BERNARDINO
San Diego Co. Env. Health	SAND	SAN DIEGO
San Gabriel Valley MVCD	SGVA	LOS ANGELES
Santa Barbara Co. MVMD	SBCO	SANTA BARBARA
Ventura Co. Env. Health	VENT	VENTURA

Northe	rn District	s
Start Week:	April 22.	. 2019
AGENCY NAME	CODE	
Alameda Co. VCD	ACVC	ALAMEDA
Burney Basin MAD	BURN	SHASTA
Butte Co. MAD	BUCO	BUTTE
Colusa MAD	CLSA	COLUSA
Contra Costa MVCD	CNTR	CONTRA COSTA
East Side MAD	EAST	STANISLAUS
Glenn Co. MVCD	GLEN	GLENN
Lake County MAD	LAKE	LAKE
Marin-Sonoma MVCD	MARN	SONOMA
Merced MAD	MERC	MERCED
Nevada County Agr. Dept	NEVA	NEVADA
No. Salinas Valley MVCD	NSAL	MONTEREY
Placer MVCD	PLCR	PLACER
Sacramento-Yolo MVCD	SAYO	SACRAMENTO
Saddle Creek	SCSD	CALAVERAS
San Benito Ag Dept	SBVC	SAN BENITO
San Mateo Co. MAD	SANM	SAN MATEO
Santa Clara Co. VCD	STCL	SANTA CLARA
Santa Cruz Co. MVCD	SCRZ	SANTA CRUZ
Shasta MVCD	SHAS	SHASTA
Solano Co. MAD	SOLA	SOLANO
Sutter-Yuba MVCD	SUYA	SUTTER
Tehama County MVCD	TEHA	TEHAMA

2019 Southern California Schedule for Chicken Samples

April 4: Pick up chickens in Modesto. Bleed and <u>hold samples in refrigerator</u> for reference. Bleed chickens during <u>highlighted weeks</u> and ship to address below for testing.

		Ap	ril 2	019		
S	М	т.	W	Т	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	- '			
		00				
		Ju	ly 20	019		
S	М	Т	W	Т	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			
•				2019	_	_
S	M	Т	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

= Bleed/ship week= State Holiday

Mail samples to: California Dept. of Public Health
Vector Borne Disease Section, G164 (ATTN: Mary Joyce Pakingan)
850 Marina Bay Parkway
Richmond, CA 94804

If there are questions, call Tina Feiszli at (510) 412-6253 or e-mail: tina.feiszli@cdph.ca.gov

2019 Northern California Schedule for Chicken Samples

April 4: Pick up chickens in Modesto. Bleed and <u>hold samples in refrigerator</u> for reference. Bleed chickens during <u>highlighted weeks</u> and ship to address below for testing.

		Аp	ril 20)19		
S	М	Т	W	Т	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				
		Ju	ly 20	19		
S	М	Т	W	Т	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	
		Octo	ber :	2019		
S	М	Т	W	Т	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Legend:

= Bleed/ship week = State Holiday

Mail samples to: California Dept. of Public Health

Vector Borne Disease Section, G164 (ATTN: Mary Joyce Pakingan)

850 Marina Bay Parkway

Richmond, CA 94804

If there are questions, call Tina Feiszli at (510) 412-6253 or e-mail: tina.feiszli@cdph.ca.gov